



GLAST E/PO Program Status

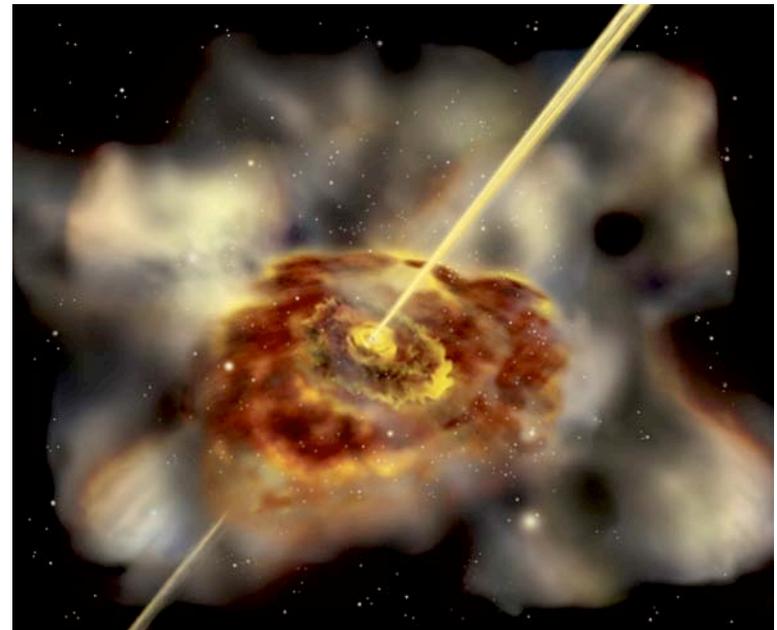
Science Working Group Meeting 9/2/05

Lynn Cominsky
Sonoma State University



E/PO Work Breakdown Structure

- 1) Management
- 2) Assessment and Evaluation (WestEd)
- 3) Web based Materials
 - Web Site – Newly revised
 - *Space Mysteries (2004-2006)*
- 4) Educator Training
 - Educator Ambassadors Program
 - Conference participation
- 5) Printed materials
 - TOPS Lesson Modules
 - Posters and Activities
- 6) *SLAC Virtual Visitor Center (2004-5)*
- 7) PBS documentary (Tom Lucas Productions) (2003-2006)
- 8) Global (formerly GLAST) Telescope Network





Space Mysteries



- <http://mystery.sonoma.edu>

A screenshot of the GLAST website interface. The main display area shows a spectral plot with a grid of dashed lines. The x-axis is labeled with numbers 12, 10, 8, 6, 4, 2, 0. The y-axis is labeled with numbers 90, 60, 30, 0. A single data point is plotted at approximately (4, 90). To the right of the plot is a vertical menu with three options: "Optical", "Radio", and "X-Ray". Below the plot is a "Glossary of Terms" section with two entries: "26Al (26-ALUMINUM)" and "ABSORPTION LINE". The interface includes several navigation buttons: "exit", "back", "glossary", "main menu", "report to mission control", and "help".

Is the
Milky Way
turning
into an
active
galaxy?



GLAST E/PO Staff Workshops & Lectures

4/16/05, 6/29/05, 7/5/05 Professor Lynn Cominsky, *Swift View of the Universe*- invited lectures in Santa Rosa, San Francisco and Holton, Kansas -- All lectures included GORT and the GTN

May and June-July, 2005 *You are Here* 6-hour Mini-Course by Sarah Silva with help from Cominsky, Plait, Prasad, and Hill – given at Roseland University Prep High School and again at Valley of the Moon Boys and Girls Club

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E/PO Staff Workshops & Lectures

8/15-19/05 Tim Graves and Kevin McLin
"Cookie Cutter Astrophysics - The Brightness of Stars" Hands On Universe Teacher Resource
Agent Conference 2005 in Williams Bay, WI

5/12/05: Phil Plait, "Seven Ways a Black Hole Can Kill You" for the "Inside Einstein's Universe" telecon; 12 planetarium/museum personnel attended.



GLAST EA Presentations since 3/24/05

- **March 30, 2005**, Ellen Holmes, "Active Galaxies", InternationalED.org, Raleigh, NC
- **April 2, 2005** Michiel Ford and Sharla Dowding, "Black Holes: Monsters of the Universe", NSTA National Convention, Dallas, TX
- **April 2, 2005**, Michiel Ford, "Banner Creek Observatory Project", NSTA National Convention, Dallas, TX
- **April 1, 2005**, Pamela Whiffen, "Supermassive Black Holes and the Marvels of Gamma-Rays, NSTA National Convention Dallas, TX
- **April 1, 2005**, Daryl Taylor, "Far Out Math with TOPS!", NSTA National Convention, Dallas, TX



GLAST EA Presentations since 3/24/05

- **April 1, 2005**, Walter Glogowski, "How to Use a Research-based Approach to Teach About Gamma-ray Bursts, NSTA National Convention, Dallas, TX
- **April 3, 2005**, Daryl Taylor, "What Makes an Active Galaxy ACTIVE?", NSTA National Convention, Dallas, TX
- **April 19, 2005**, Jeff Adkins, "The Electromagnetic Spectrum"
Teachers in the Contra Costa County/SF Bay Area
Deer Valley High School, CA
- **May 11, 2005**, Jeff Adkins, "Using Space Probes in the Classroom", Intel International Science and Engineering Fair, Phoenix, AZ



GLAST EA Presentations since 3/24/05

- **June 3-4, 2005**, Jeff Adkins, Contra Costa County Fair, Antioch, CA
- **June 2, 2005**, Teena Della, "Rising to the Challenge" Maple Creek Middle School, Coquitlam, BC
- **July 29, 2005** Walter Glogowski, "Active Galaxies and NASA's Swift and GLAST Telescopes, Wabash County Astronomical Society Regional Meeting
Wabash Astronomical Society, IN

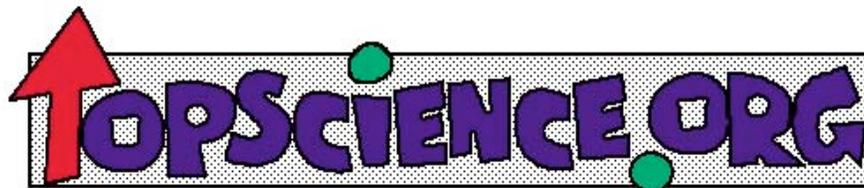
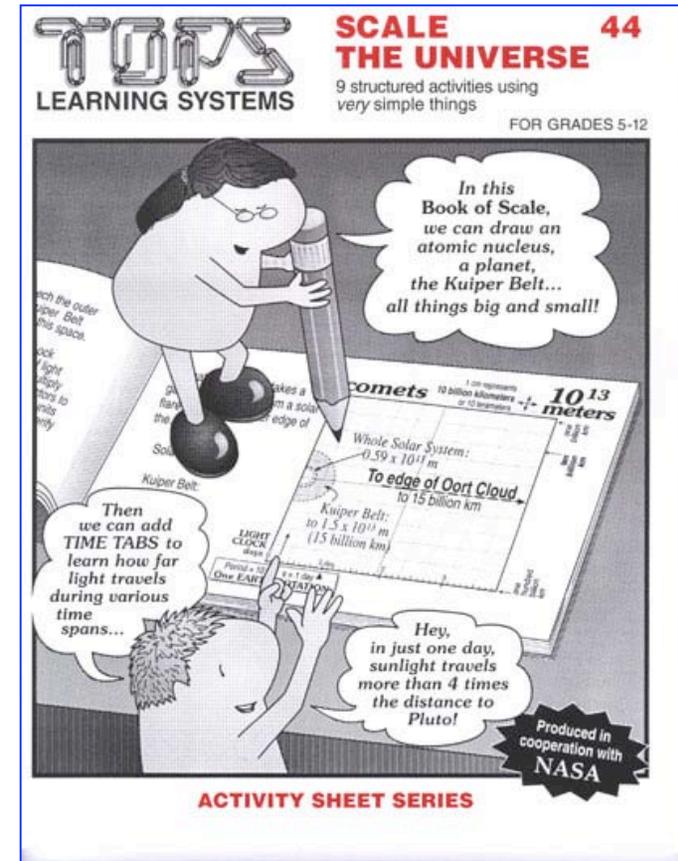
We have lost one GLAST EA – she had to resign due to a new assignment at her school district. She will be replaced by an already trained EA from another program.



TOPS Learning Systems

▶ SCALE THE UNIVERSE

- Is the basis of mini-course that piloted with Roseland University Prep Charter School, and was given to Boys & Girls Club this summer
- Reviewed by NASA Ed Product Review — “ Recommended via Teacher Workshops and to a Limited Audience, Grades 7-12 ”



<http://www.topscience.org/>

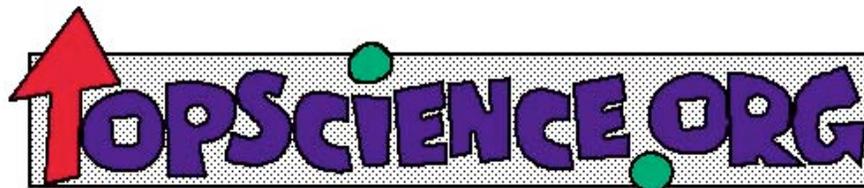
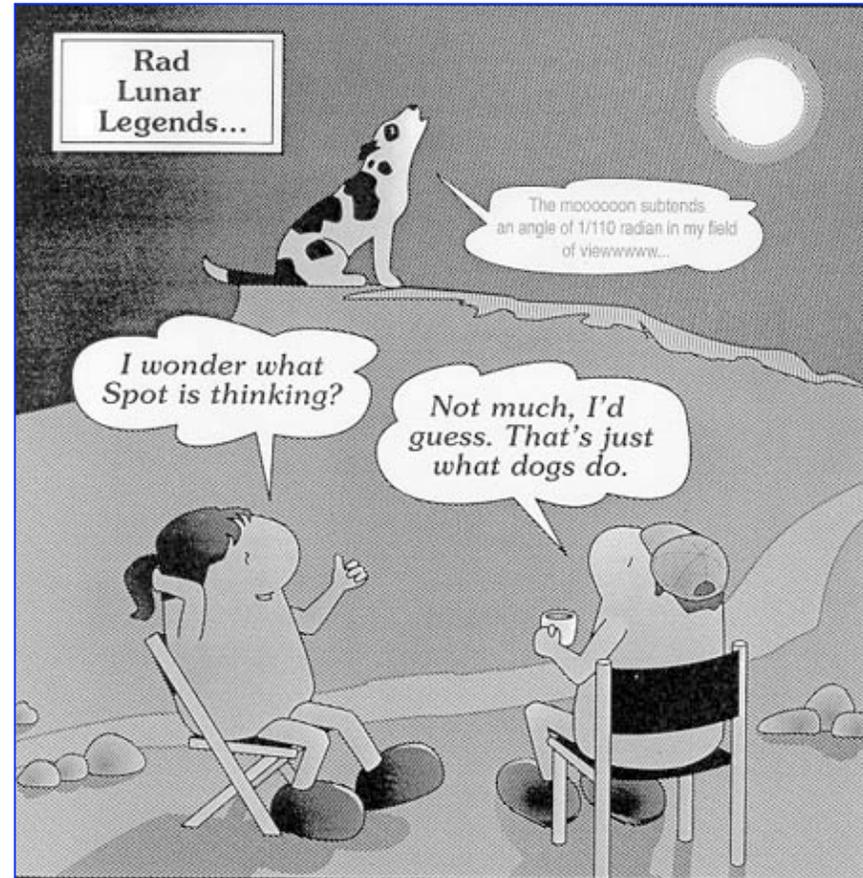
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TOPS Learning Systems

► Pi in the Sky

- Reviewed by WestEd and technical review by EPO team and EAs
- Expected to be in print by the end of 2005
- This completes the TOPS series



<http://www.topscience.org/>

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You are Here!

- Mini-course for 8th - 9th grade students
 - The Size and Scale of Things
 - How We See the Universe
 - Trip to the Sun
 - Solar System Travel Plans
 - Our Milky Way Galaxy and Beyond

- Uses Scale the Universe and GEMS

<http://epo.sonoma.edu/youarehere/>

You Are Here



Come explore the very small to the very big with NASA. This six-session mini course will take you through a tour of the very microscopic and the very astronomic, viewing this, and everything in between with different eyes. Come and find your cosmic address in the Universe and see all of the many amazing things inside your atoms and above your head.

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You are Here Course in the News

The Sonoma Index-Tribune Sonoma Valley, California

Robbi Pengolly/Index-Tribune

RONNIE PERKINS, 13, left, and Mauricio Acevedo, 15, right, work with Phil Plait, center, an astronomer from SSU, to learn how different kinds of light go through or are blocked by various objects.

From black lights to black holes

By Emily Setzer "During the first class, all the kids... the various light sources and asked a lot..."

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Other printed materials

- **New materials almost done!**
 - GLAST Race Card Game – at printers, online
 - AGN Pop-up Book – out for quotes
 - How the Galaxy Got its Jets booklet



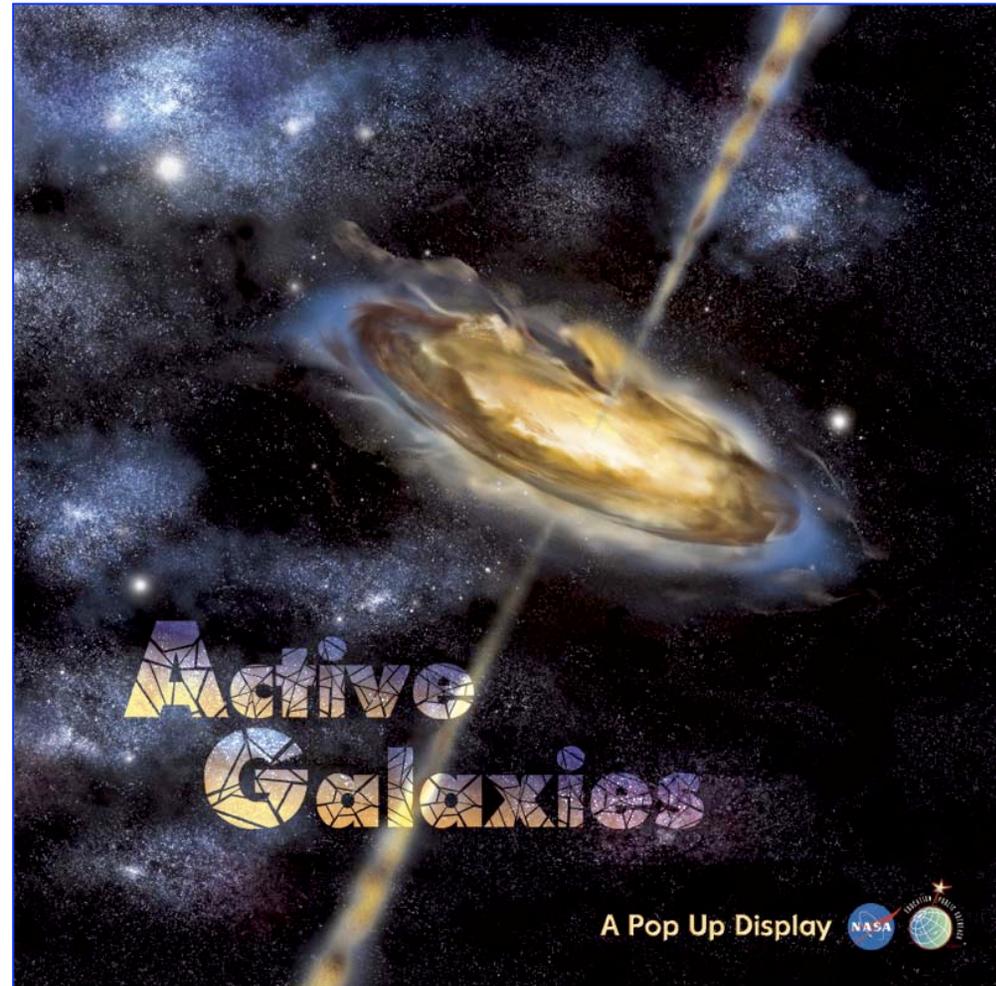
- **GTN Observing activities tutorials**
 - Cookie Cutter Astrophysics – now on line
 - Astrometry tutorial – being written up
 - Jelly bean Spectroscopy – write up now in review
 - User's Manual now being written up





AGN Popup Book

Cover of the book. Now at the “pop-up” designers to see how to actually do the center pop-up part.





Supernova Educator Unit

Plan to be released in
January 2006

- 3 activities
 - Decaying Supernovae
 - The Crawl of the Crab
 - At the Heart of a Supernova



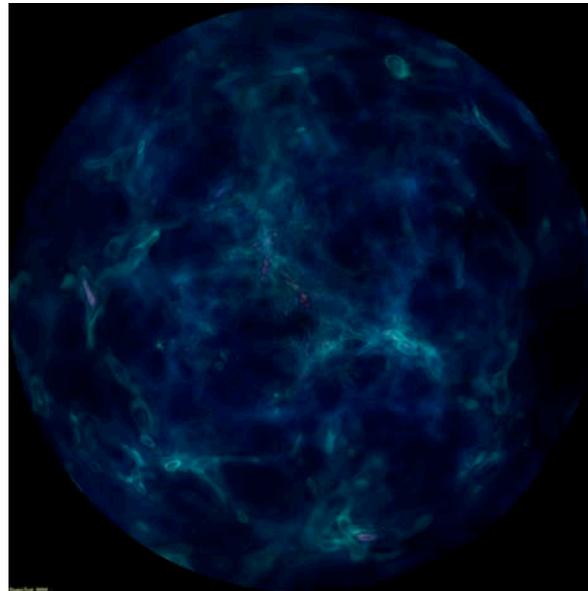
- **Poster of Supernovae**

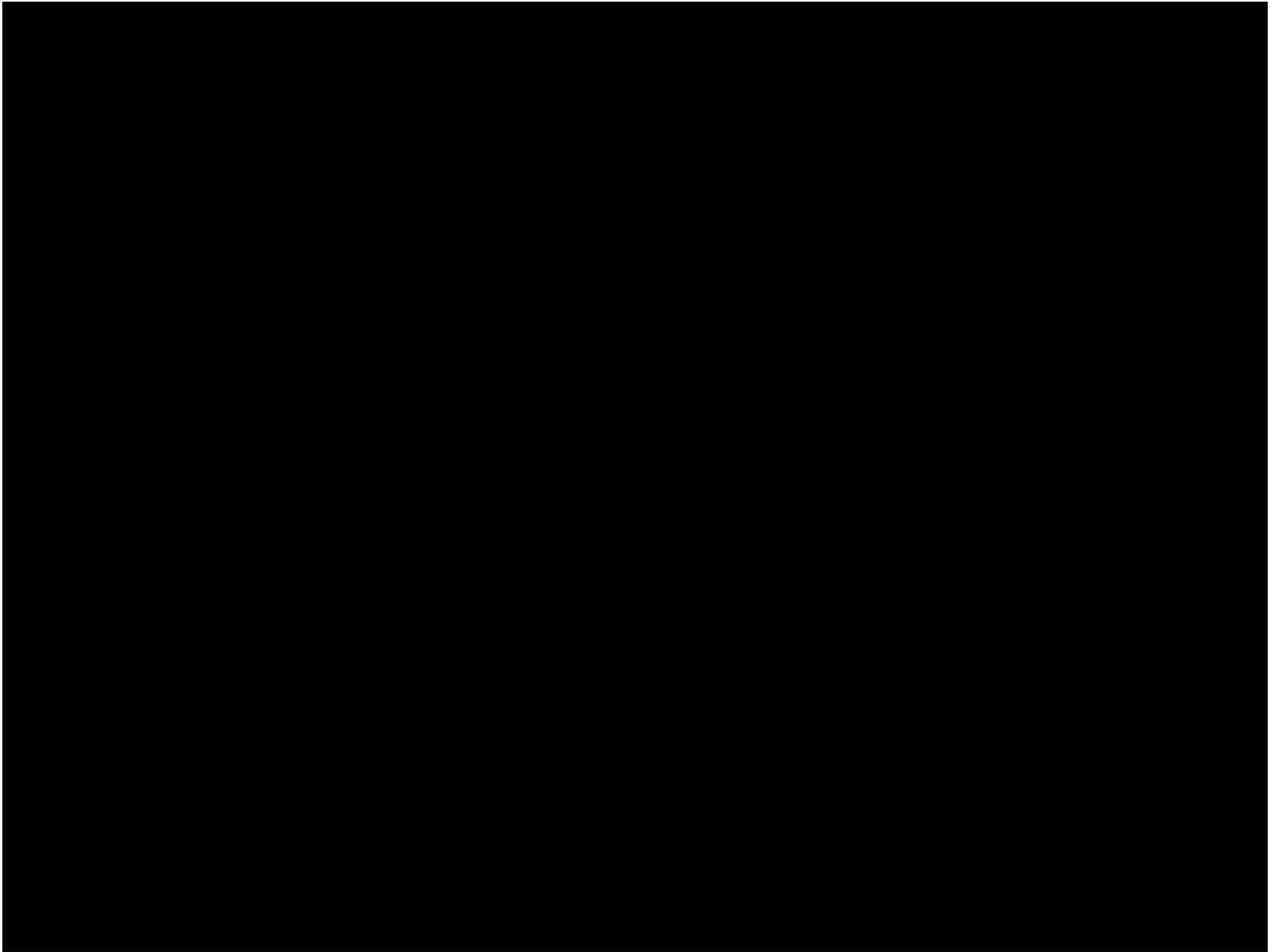
- Images of real Supernovae
- Shows what a Supernova looks like during different stages of the explosion

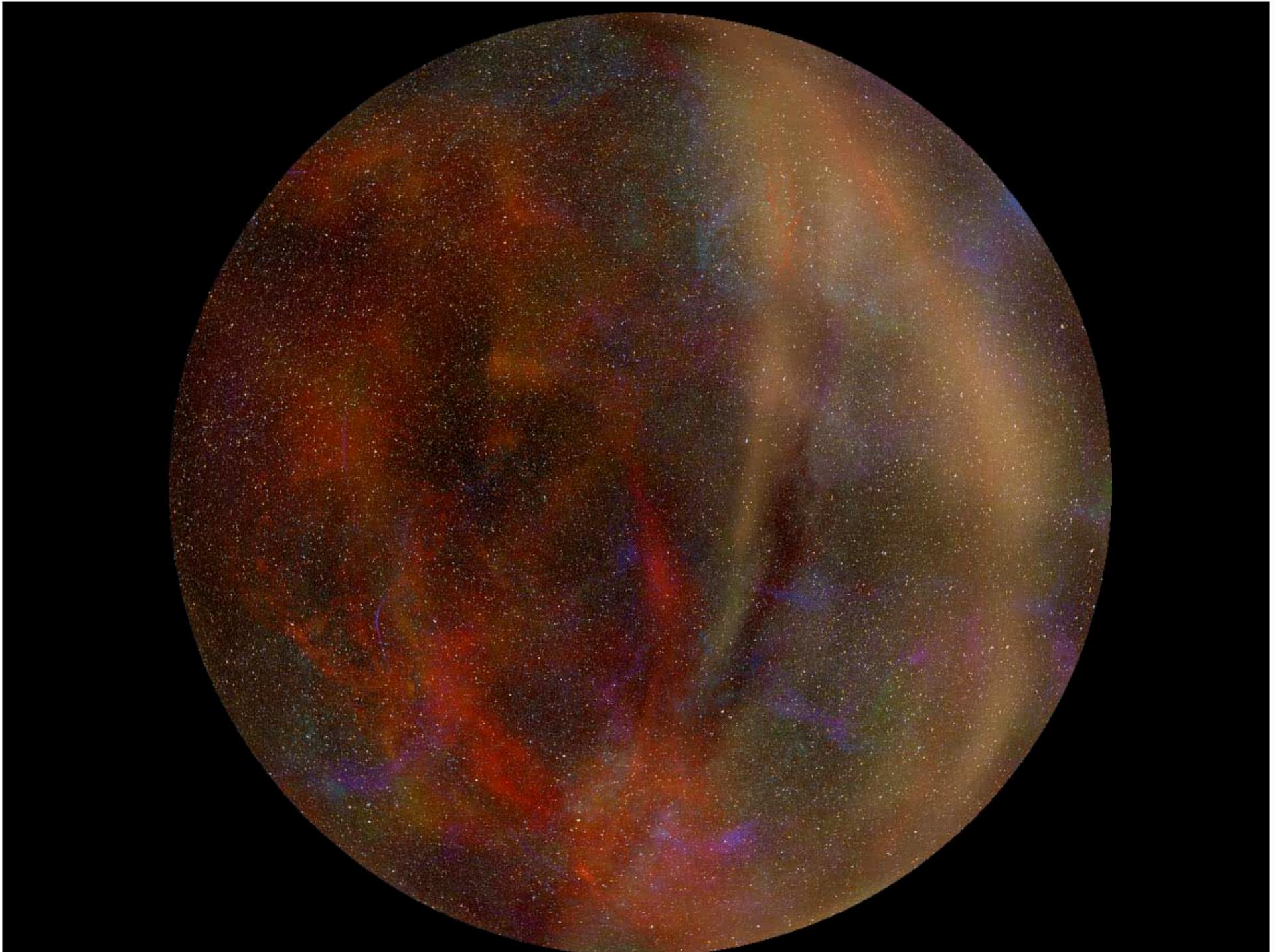


PBS Television Special

- Tom Lucas productions – planetarium show almost complete – should air by end of 2005 at DMNS
- Program should air in early 2006
- Planetarium show videos reviewed at DMNS in August









Global Telescope Network

- Simple image reduction and analysis of ~15 AGN to establish variability baselines
- Hands-On Universe
- AAVSO participation

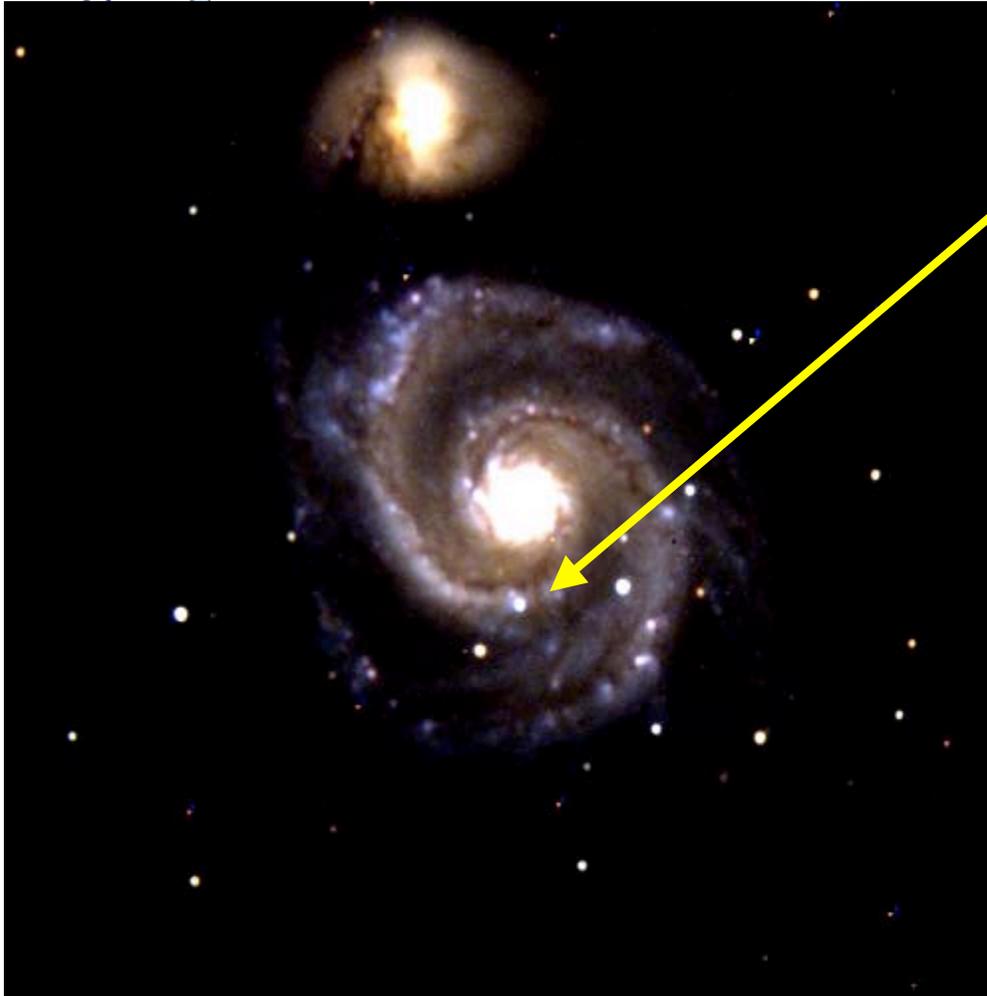


- Elk Creek Observatory at Holton, Kansas HS
- Agrupacion Astronomica de Sabadell. Barcelona, Spain
- Tonantzintla Observatory Tonantzintla, Mexico
- Universidad Nacional de La Plata Buenos Aires, Argentina
- Bernard Heathcote. Victoria, Australia
- Carnes Hill Observatory. Sydney, Australia
- Nyrola Observatory Muurame, Finland
- Western Kentucky University

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Images from GORT

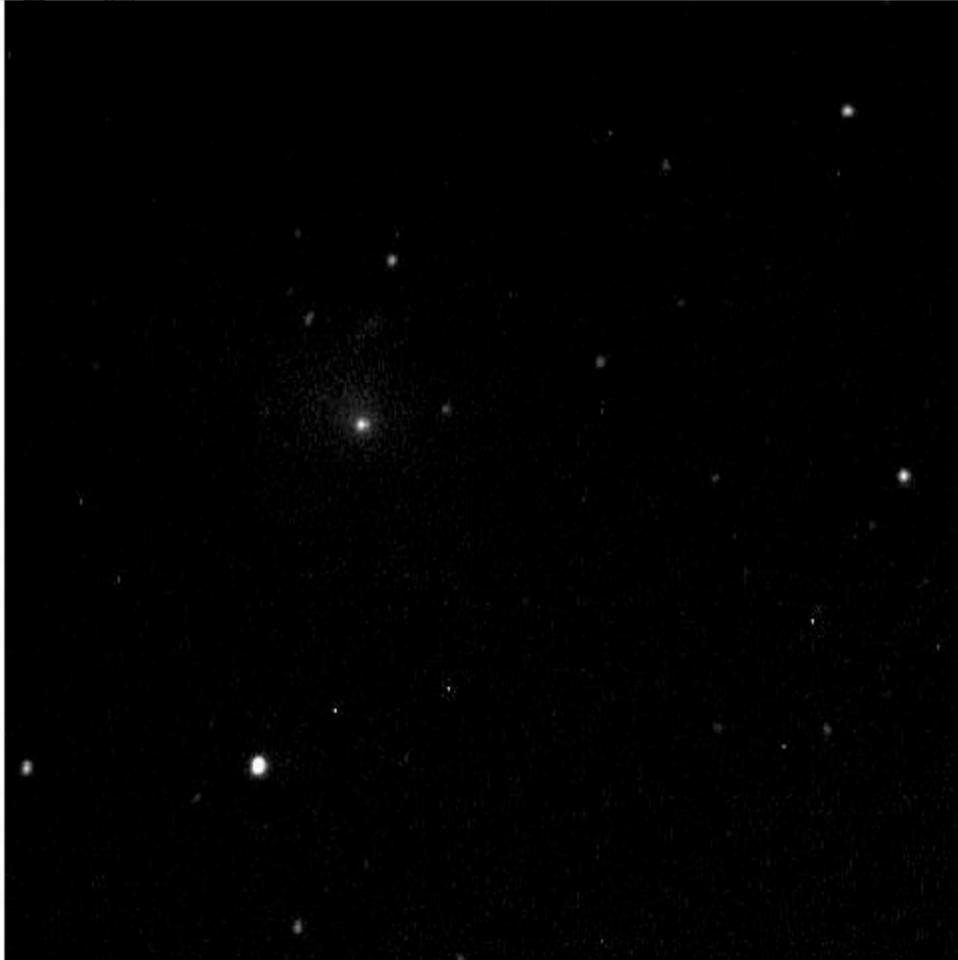


- Supernova in M51
- True color composite image from R, G & B

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Images from GORT



- Animation of 53 images of Comet Tempel-1 during 42 minutes around Deep Impact
- Jump in position is artifact of data taking



GLAST Public Relations - Update

- “Giveaways” at science meetings
 - Out of flashlights
 - A few more Magic cubes left
 - New shipment of stickers just arrived
- Suggestions for new giveaways always welcome
- Posters – should we order more?



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E/PO Summary

- **We are finishing a number of new products that have been in the development and test/review cycle for 2 years now.**
- **In the next few months, you should start to see the results of our efforts - they will have been worth the wait!**